WHAT IS CLAIMED IS:

1. A network signalling system, comprising a plurality of interconnected signalling points, each signalling point including a protocol layer that is able to simultaneously offer connectionless and connection-oriented protocol services and that is adapted to handle network management procedures, wherein the network management procedures are identified, distinguished, and applied in the network signalling system on per connectionless and per connection-oriented bases.

2. The network signalling system of claim 1, wherein the protocol layer is a Signalling Connection Control Part layer.

3. The network signalling system of claim 2, wherein the network management procedures comprise procedures to indicate and handle availability status for the connectionless service itself and for a user of the connectionless service, availability status for the connection-oriented service itself and for a user of the connection-oriented service, and availability status for both the connectionless and connection-oriented services and for users of both protocol services.

4. The network signalling system of claim 3, wherein an availability status comprises at least one of an "Allowed" or available state, a "Prohibited" or unavailable state, and a "Congested" or a predetermined congestion level state, for at least one of the connectionless and connection-oriented services.

5. The network signalling system of claim 3, wherein an availability status is communicated from a protocol layer at a signalling point to a peer protocol layer at another signalling point by a corresponding management signalling message that includes information about an affected signalling point, an affected subsystem number, and an affected protocol service.

6. The network signalling system of claim 5, wherein a "Subsystem Status Allowed" management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "Subsystem Status Allowed" management message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing either a user of the at least one protocol service or the protocol service itself, and an affected signalling point at which the affected subsystem number resides; and the "Subsystem Status Allowed"

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message indicates that the affected subsystem number located at the affected signalling point is available to support signalling traffic for the indicated at least one protocol service.

7. The network signalling system of claim 5, wherein a "Subsystem Status Prohibited" management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "Subsystem Status Prohibited" message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing a user of the at least one protocol service, and an affected signalling point at which the user represented by a subsystem number resides; and the "Subsystem Status Prohibited" message indicates that the affected subsystem number located at the affected signalling point is unavailable to support signalling traffic for the indicated at least one protocol service.

8. The network signalling system of claim 5, wherein a "SCCP/Subsystem Congestion" management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "SCCP/Subsystem Congestion" message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing either a user of the at least one protocol service or the protocol service itself, a congestion level that the indicated protocol service or the user has reached, and an affected signalling point at which the affected subsystem number resides; and the "SCCP/Subsystem Congested" message indicates that the affected subsystem number located at the affected signalling point has reached the indicated congestion level for supporting signalling traffic for the indicated at least one protocol service.

9. The network signalling system of claim 5, wherein a "Subsystem Status Test" management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "Subsystem Status Test" message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing either a user of the at least one protocol service or the protocol service itself, and an affected signalling point at which the affected subsystem number resides; and the "Subsystem Status Test" message queries about an availability status of the affected subsystem number located at the

affected signalling point to support signalling traffic for the indicated at least one protocol service.

10. The network signalling system of claim 5, wherein a "Subsystem Out of service Request" (SOR) management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "Subsystem Out of service Request" message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing either a user of the at least one protocol service or the protocol service itself, and an affected signalling point at which the affected subsystem number resides; and the "Subsystem Out of service Request" message requests a backup subsystem to handle signalling traffic for the indicated affected protocol service that was initially addressed to the affected subsystem number located at the affected signalling point.

11. The network signalling system of claim 5, wherein a "Subsystem Out of service Granted" (SOG) management message is sent from a protocol layer at a signalling point to a peer protocol layer at another signalling point; the "Subsystem Out of service Granted" message includes an affected protocol service indicator representing at least one protocol service, an affected subsystem number representing either a user of the at least one protocol service or the protocol service itself, and an affected signalling point at which the affected subsystem number resides; and the "Subsystem Out of service Granted" message indicates an acceptance to act as a backup subsystem to handle signalling traffic for the indicated affected protocol service that was initially addressed to the affected subsystem number located at the affected signalling point.

12. The network signalling system of claim 3, wherein availability status is communicated from a protocol layer at a signalling point to a user of the protocol layer at the signalling point by a corresponding management signalling primitive that includes information about the affected signalling point, the affected subsystem number, and the affected protocol service representing at least one protocol service.

13. The network signalling system of claim 3, wherein availability status is communicated from a user of a protocol layer at a signalling point to the protocol layer at the signalling point by a corresponding management signalling primitive that includes information about the affected signalling point, the affected subsystem number, and the

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affected at least one protocol service.

14. The network signalling system of claim 2, wherein the network management procedures include applying signalling traffic restrictions for outgoing traffic originated by a local user or relayed from another signalling node due to congestion or changes in availability status of an adjacent signalling node on per connectionless and per connection-oriented bases.

15. The network signalling system of claim 2, wherein the network management procedures include applying signalling traffic restrictions for incoming traffic from adjacent signalling nodes due to congestion or changes in availability status in a signalling node on per connectionless and per connection-oriented bases.

16. A method of applying network management procedures in a signalling network that includes a plurality of interconnected signalling points, each signalling point having a protocol layer that is able to simultaneously offer connectionless and connection-oriented protocol services and that is adapted to handle network management procedures, the method comprising:

determining a change of availability status for at least one of the protocol services;

updating a corresponding availability status table for the at least one protocol service;

informing a peer protocol layer at a remote signalling point about the change of availability status for the at least one protocol service;

querying the peer protocol layer at the remote signalling point about a present value of availability status for the at least one protocol service;

co-ordinating a backup user at a remote signalling node to handle signalling traffic initially intended for an indicated affected subsystem at the indicated signalling point and for the indicated protocol service representing at least one protocol service;

applying signalling traffic restrictions for outgoing traffic originated by a local user or relayed from another signalling node due to congestion or a change in availability status on an adjacent signalling node on a per protocol service basis; and

applying signalling traffic restrictions for incoming traffic from adjacent signalling nodes due to congestion or a change in availability status on an own signalling node on

a per protocol service basis;

wherein the network management procedures are identified, distinguished, and applied on per connectionless and per connection-oriented bases.

17. The method of claim 16, wherein the protocol layer is a Signalling Connection Control Part layer.

18. The method of claim 17, wherein step a) includes determining a change of availability status based on at least one of a user of the at least one protocol service and the at least one protocol service itself.

19. The method of claim 17, wherein step b) comprises updating the corresponding availability status table based on at least one of a user of the at least one protocol service and the at least one protocol service itself.

20. The method of claim 18, wherein a user of the at least one protocol service and the at least one protocol service itself can be located at the own signalling node or at a remote signalling node.

21. The method of claim 19, wherein a user of the at least one protocol service and the at least one protocol service itself can be located at the own signalling node or at a remote signalling node.

22. The method of claim 17, wherein step c) comprises informing peer protocol layers at remote signalling points about changes in availability status of at least one of a user of the at least one protocol service and the at least one protocol service itself.

23. The method of claim 22, wherein a protocol layer at a remote signalling point is informed about a change of availability status through a corresponding SCCP management message that includes an identifier of the protocol service for which the change of availability status occurred.

24. The method of claim 17, wherein step d) comprises querying a peer protocol layer at a remote signalling point about a current value of availability status of at least one of its own users of the at least one protocol service and the at least one protocol service itself.

25. The method of claim 17, wherein step e) comprises the steps of: e1) requesting, by a local user, an indicated backup subsystem at a remote signalling node to deal with signalling traffic for an indicated protocol service initially addressed to the local user; e2)

informing a peer protocol layer at the remote signalling point about the request for backup for the indicated protocol service; e3) requesting, by the peer protocol layer at the remote signalling point, its indicated user to act as backup of the local subsystem for the indicated protocol service; e4) answering, by the indicated user, with an acceptance

5 to the peer protocol layer for the indicated protocol service; e5) granting, by the peer protocol layer, the backup subsystem to the local protocol layer to handle traffic addressed to the local protocol user for the indicated protocol service; and e6) informing, by the local protocol layer, the local user of the granted backup subsystem to handle signalling traffic addressed to the local user for the indicated protocol service.

10 26. The method of claim 17, wherein step f) comprises comparing and treating the remote affected congestion level, the remote restriction level, and the remote restriction sub-Level on a per protocol service basis.

27. The method of claim 17, wherein step g) comprises comparing and treating the local congestion level, the local restriction level, and the local restriction sub-Level on a

15 per protocol service basis.

28. An apparatus for applying network management procedures in a signalling network that includes a plurality of interconnected signalling points, each signalling point including a protocol layer that is able to simultaneously offer connectionless and connection-oriented protocol services and that is adapted to handle network

20 management procedures supported on per connectionless and per connection-oriented bases, the apparatus comprising:

means for determining a change of availability status for at least one of the protocol services;

a memory in which availability status, including a congestion measurement, for at

25 least one of the protocol services can be stored;

means for informing a peer protocol layer at a remote signalling point about a change of availability status or a congestion measurement for at least one protocol service;

means for querying a peer protocol layer at a remote signalling point about a

30 present value of availability status or congestion measurement for at least one protocol service;

means for co-ordinating a backup user at a remote signalling node to handle signalling traffic initially intended for an indicated affected subsystem at an indicated signalling point and for an indicated protocol;

means for applying a signalling traffic restriction for outgoing traffic originated by a local user or relayed from another signalling node due to congestion or a changes of availability status on an adjacent signalling node on a per protocol service basis; and

means for applying a signalling traffic restriction for incoming traffic from an adjacent signalling node due to congestion or a change of availability status on an own signalling node on a per protocol service basis.

29. The apparatus of claim 28, wherein the protocol layer is able to simultaneously offer connectionless and connection-oriented services, and the apparatus further comprises means for distinguishing the management procedures on per connectionless and per connection-oriented bases, the distinguishing means residing at a signalling connection control part layer.